

### ANTENNA FEATURES

- 3.8m segmented single- or three-piece field bolt-up carbon fiber reflector
- Easily swappable toolless RF kits to change frequency bands
- Zero-backlash cable drive
- Compact and rugged polarization gear drive
- One-button auto-acquisition feature
- Feed options:
  - Dual C/Ku-Band Rx Only Feed (Ku-LP, C-LP, and C-CP)
  - Two-Port Mode-Matched Ku-Band (LP)
  - Two-, Three-, or Four-Port C-Band (CP or LP)
  - Two-Port or Four-Port Commercial Ka-Band (CP or LP)
  - Two-Port or Four-Port MIL Ka-Band (CP)
  - Two-Port or Four-Port Commercial/MIL Wide-Band Ka (CP)
  - Four-Port Mode-Matched Ku-Band (LP)
  - Two-Port X-Band (CP) Single Carrier (Tx)
  - Two-Port X-Band (CP) Multi-Carrier (Low-PIM)
- Compact motorized worm gear drive
- White, tan or metallic gray colors (additional colors available)



### MECHANICAL SPECIFICATIONS

<b>Azimuth/Elevation/Polarization Drives</b>		<ul style="list-style-type: none"> <li>▪ Motorized zero-backlash cable drive for azimuth and elevation</li> <li>▪ Motorized worm gear drive for polarization</li> </ul>
<b>Reflector Construction</b>		3.8m single- or three-piece carbon fiber reflector (removable side panel options can be motorized or manual)
<b>Axis Travel</b>	<b>Azimuth</b>	270° (± 135°)
	<b>Elevation</b>	0° to 90° of reflector boresight from calibrated inclinometer (-5° to 65° CE approval)
	<b>Polarization</b>	± 95°
<b>Axis Speed</b>	<b>Slewing/Deploying</b>	1°/second azimuth and polarization, 0.5°/second elevation
	<b>Peaking</b>	0.2°/second typical, settable in controller
<b>Motors</b>		90 VDC variable speed, constant torque
<b>RF Interface</b>	<b>BUC/HPA Mounting</b>	Feed boom, 200 lbs. (91 kg) maximum weight
	<b>Waveguide</b>	Flexible/rigid waveguide from feed to BUC/HPA assembly
	<b>Coax</b>	Two Type N connectors at antenna base bulkhead
<b>Electrical Interface</b>		Connectors at bulkhead below azimuth bearing
<b>Manual/Emergency Drive</b>		Hand crank on azimuth, elevation, and polarization axes
<b>Weight (approximate)</b>		2,500 – 2,700 lbs. (1,137 – 1,227 kg) depending on options
<b>Stowed Dimensions</b>		213 L x 151 W x 43 H inches (541 L x 384 W x 109 H cm)
<b>Time to Acquisition</b>		Less than 15 minutes
<b>Mounting</b>		(24) ½-13 threaded holes

## ENVIRONMENTAL SPECIFICATIONS

<b>Wind – Survival</b>	Deployed	70 mph (113 km/h)	
	Stowed	120 mph (193 km/h)	
<b>Wind – Operational</b>		65 mph (97 km/h)	
<b>Pointing Loss in Wind (RX)</b>	Band	Ku-Band Receive	Ka-Band Receive
	20 mph (32 km/h)	0.5 dB maximum	1.4 dB maximum
	30 mph gusting to 45 mph (48 km/h to 72 km/h)	2.0 dB typical	2.0 dB typical (with “elevation wind hold” controller upgrade activated)
	45 mph gusting to 60 mph (72 km/h to 97 km/h)	3.3 dB typical (with “elevation wind hold” controller upgrade activated)	--
<b>Temperature</b>	Operational	22° to 125° F (-30° to 52° C) Optional low-temperature operation upgrade kits available.	
	Survival	-40° to 140° F (-40° to 60° C)	

**RF PARAMETERS: KU-BAND MODE-MATCH (TWO-PORT)**

		Receive	Transmit
<b>Frequency Range (GHz)</b>		10.70 – 12.75	13.75 – 14.50
<b>Polarization Configuration</b>		Linear orthogonal two-port standard; optional co-polarization or four-port	
<b>Gain (dBi)</b>	Two-Port	51.5	53.0
	Four-Port	51.1	52.5
<b>Beamwidth (Degrees)</b>	-3 dB	0.5	0.4
<b>Radiation Pattern Compliance</b>		FCC 25.209, ITU-R S.580-6, IESS 208	
<b>Antenna Noise Temperature (Midband, 20° EI)</b>	Two-Port	54° K	--
	Four-Port	73° K	--
<b>Power Handling Capability</b>		--	1000 W
<b>Cross-Polarization Isolation (LP Only, within Pointing Cone)</b>	On-Axis Minimum	35	35
	Within Pointing Cone	26 (MM Feed)	35 (MM Feed)
	On-Axis Within Pointing Cone	--	--
<b>Feed Port Isolation (Tx to Rx, dB)</b>		35	80 (including filter)

**RF PARAMETERS: KA-BAND (TWO-PORT)**

		Receive	Transmit
<b>Frequency Range (GHz)</b>	Commercial	17.70 – 20.20	27.50 – 30.0
	Military	20.20 – 21.20	30.00 – 31.00
<b>Polarization Configuration</b>		Circular or linear two-port, optional four-port	
<b>Gain (dBi)</b>	Two-Port	56.1	59.4
	Four-Port	56.1	59.4
<b>Beamwidth (Degrees)</b>	-3 dB	0.3	0.2
<b>Radiation Pattern Compliance</b>		FCC 25.209, MIL-STD-188-164C	
<b>Antenna Noise Temperature (Midband, 20° EI)</b>	Two-Port	102° K	--
	Four-Port	102° K	--
<b>Power Handling Capability</b>		--	200 W
<b>Cross-Polarization Isolation (LP Only, within Pointing Cone)</b>	On-Axis Minimum	--	--
	Within Pointing Cone	--	--
	On-Axis Within Pointing Cone	--	--
<b>Feed Port Isolation (Tx to Rx, dB)</b>		85	85 (including filter)

### RF PARAMETERS: C-BAND (TWO-PORT)

		Receive	Transmit
<b>Frequency Range (GHz)</b>	Standard	3.625 – 4.200	5.850 – 6.425
	INSAT	4.500 – 4.800	6.725 – 7.025
<b>Polarization Configuration</b>		Linear or circular two-port, optional three-port	
<b>Gain (dBi)</b>	Two-Port	Standard	42.0
		INSAT	43.5
<b>Beamwidth (Degrees)</b>	-3 dB	Standard	1.4
		INSAT	1.2
<b>Radiation Pattern Compliance</b>		FCC 25.209, ITU-R S.580-6, IESS 207	
<b>Antenna Noise Temperature (Midband, 20° EI)</b>	Two-Port	37° K	--
	Four-Port	--	--
<b>Power Handling Capability</b>		--	1000 W (LP) 2500 W (CP)
<b>Cross-Polarization Isolation (LP Only, within Pointing Cone)</b>	On-Axis Minimum		--
	Within Pointing Cone		--
	On-Axis Within Pointing Cone		35 / 27
<b>Feed Port Isolation (Tx to Rx, dB)</b>		35	105 (including filter)

**RF PARAMETERS: X-BAND (TWO-PORT)**

		Receive	Transmit
<b>Frequency Range (GHz)</b>	Military	7.25 – 7.75	7.9 – 8.4
<b>Polarization Configuration</b>		RHCP or LHCP two-port	
<b>Gain (dBi)</b>	Two-Port (Not Including Optional Filters)	47.6	48.3
<b>Beamwidth (Degrees)</b>	-3 dB	0.7	0.7
<b>Radiation Pattern Compliance</b>		MIL-STD-188-164A	
<b>Antenna Noise Temperature (Midband, 20° EI)</b>	Two-Port	45° K	--
	Four-Port	--	--
<b>Power Handling Capability</b>		--	1000 W
<b>Cross-Polarization Isolation (LP Only, within Pointing Cone)</b>	On-Axis Minimum	--	--
	Within Pointing Cone	--	--
	On-Axis Within Pointing Cone	--	--
<b>Feed Port Isolation (Tx to Rx, dB)</b>		115 (including filter)	115 (including filter)

## CONTROLLER – AAQ1500

<b>Features</b>	With the AvL AAQ1500 Controller, one-button auto-acquisition feature with preselected satellite, including peaking and drive to calculated polarization. Optional upgrades include a beacon receiver or beacon signal detector and tracking software. Interface is controlled via RS-422 or Ethernet remote control protocol installed on user's computer.
<b>Software</b>	Windows-based AAQRemote software with stowing, deployment, tracking, logging, and more features for operation. Additional browser-based AAQ WebUI.
<b>Input Power</b>	240 VAC 50/60 Hz 20A service

## OPTIONS – UPGRADES AND SERVICES

- BUC/HPA Mounting (note that minimum elevation may be impacted)
- TLE and/or inclined orbit tracking (step/memory)
- Waveguide interconnect options
- Spare parts kit
- Beacon receiver
- Upgrade to custom RF/IF I/O cabling configurations
- Custom colorization
- Custom logo on reflector
- Add co-polarization Kit (for 2-port Ku feeds only)
- Active wind tracking for high winds

## CONTAINER MOUNT OPTION

- Fully integrated into a 20-foot ISO container ready for sea transport
- ~12,500 lbs. (~5,670 kg), depending on options and other equipment

